

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number  
**WO 2004/021000 A1**

(51) International Patent Classification<sup>7</sup>: **G01N 33/53**,  
33/564, 33/573, C07K 16/40

Springfield, OR 97477 (US). **MARUSICH, Michael, F.**  
[US/US]; 389 Dellwood Drive, Eugene, OR 97405 (US).

(21) International Application Number:  
PCT/US2003/027306

(74) Agent: **HAILE, Lisa, A.**; Gray Cary Ware & Freidenrich  
LLP, 4365 Executive Drive, Suite 1100, San Diego, CA  
92121-2133 (US).

(22) International Filing Date: 29 August 2003 (29.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/407,376 30 August 2002 (30.08.2002) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,  
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(63) Related by continuation (CON) or continuation-in-part  
(CIP) to earlier application:  
US 60/407,376 (CIP)  
Filed on 30 August 2002 (30.08.2002)

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **THE  
STATE OF OREGON**, acting by and through **THE  
STATE BOARD OF HIGHER EDUCATION** on behalf  
of **THE UNIVERSITY OF OREGON** [US/US]; 1238  
University of Oregon, Eugene, OR 97403-1238 (US).

Published:  
— with international search report

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **CAPALDI, Roder-  
ick, A.** [US/US]; 4367 N. Shasta Loop, Eugene, OR 97405  
(US). **LIB, Margarita** [US/US]; 1102 West D Street,

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: **IMMUNOCAPTURE-BASED MEASUREMENTS OF MAMMALIAN PYRUVATE DEHYDROGENASE  
COMPLEX**

(57) Abstract: The present invention is based on the discovery that an antibody specific for PDH complex can be used to immuno-precipitate PDH complex from a patient sample in an active state. Therefore the anti-PDH complex specific antibody can be used to determine the amount of and/or active state of PDH in a patient sample. The invention immunoassay methods for determining the amount and/or active state of PDH complex present in a patient sample are useful for screening to identify individuals having symptoms indicating malfunction of PDH complex. For example, the invention methods can be used to screen individuals for symptoms of onset of the diabetic state, such as insulinitis, and for diagnosing late onset diseases, such as diabetes, Alzheimer's and the like.



WO 2004/021000 A1